

TRANSLATION

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 34121P WO/WW	FOR FURTHER ACTION		See Form PCT/IPEA/416
International application No. PCT/EP2004/013904	International filing date (<i>day/month/year</i>) 07.12.2004	Priority date (<i>day/month/year</i>) 08.12.2003	
International Patent Classification (IPC) or national classification and IPC C08B37/00			
Applicant BIOGHURT BIOGARDE GMBH & CO. KG			

<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of 3 sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/EP2004/013904

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:

 - international search (Rule 12.3 and 23.1(b))
 - publication of the international application (Rule 12.4)
 - international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the **elements** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

the international application as originally filed/furnished
 the description:
 pages _____ as originally filed/furnished
 pages* _____ received by this Authority on _____
 pages* _____ received by this Authority on _____
 the claims:
 nos. _____ as originally filed/furnished
 nos.* _____ as amended (together with any statement) under Article 19
 nos.* **1-12** received by this Authority on **07.02.2006 with letter of 07.02.2006**
 nos.* _____ received by this Authority on _____
 the drawings:
 sheets _____ as originally filed/furnished
 sheets* _____ received by this Authority on _____
 sheets* _____ received by this Authority on _____
 a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. The amendments have resulted in the cancellation of:

the description, pages _____
 the claims, nos. _____
 the drawings, sheets/figs _____
 the sequence listing (*specify*): _____
 any table(s) related to sequence listing (*specify*): _____
4. This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

the description, pages _____
 the claims, nos. _____
 the drawings, sheets/figs _____
 the sequence listing (*specify*): _____
 any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1–12	YES
	Claims	_____	NO
Inventive step (IS)	Claims	1–12	YES
	Claims	_____	NO
Industrial applicability (IA)	Claims	1–12	YES
	Claims	_____	NO

2. Citations and explanations (Rule 70.7)

1. This report makes reference to the following documents:

D2: US-A-4 379 059 (HOCKEY ET AL) 5 April 1983
(1983-04-05)
D3: WO 91/08281 A (UNILEVER PLC; UNILEVER N.V) 13
June 1991 (1991-06-13)
D4: EP-A-0 283 951 (NATIONAL STARCH AND CHEMICAL
CORPORATION; NATIONAL STARCH AND CHEMICAL) 28
September 1988 (1988-09-28)
D5: WO86/02076
D6: DE3246676

2. **Novelty**

The present application relates to polysaccharide derivatives comprising maleimide units (Ib) or the corresponding open units (Ia) (claim 1). The present application also relates to the corresponding method of producing these polysaccharide derivatives (claim 5) and the use of these polysaccharide derivatives for bonding to cellulose fibers (claim 10).

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITYInternational application No.
PCT/EP2004/013904**Box No. V** **Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

D2 to D6 do not disclose any polysaccharide derivatives comprising maleimide units (Ib) or the corresponding open units (Ia) (D2: see column 2, lines 17-31 ; D3: see formula III on page 8; D4: see claim 1; D5: see formula on page 4; D6: see claim 1).

The subject matter of claims 1 to 12 of the present application is novel over D2 to D6.

3. Inventive step

D2 is considered to be the closest prior art. D2 discloses a softener containing hydroxyethyl-substituted polysaccharides.

The subject matter of the present application differs from the subject matter of D2 in that the polysaccharides contain maleimide units (Ib) or the corresponding open units (Ia).

The problem addressed by the present application was that of providing a polysaccharide derivative for treating cellulose fibers.

This problem is solved by the polysaccharide derivatives comprising maleimide units (Ib) or the corresponding open units (Ia) (see example).

This solution is not suggested in D2 and is also not obvious from a combination of D2 with D3 to D6 because these documents do not disclose these units.

The subject matter of claims 1 to 12 of the

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present application therefore involves an inventive step in relation to D2 to D6.